

WHAT IS CLAIMED IS:

1. A prosthesis for maintaining lumen patency comprising:
a substantially cylindrical hollow body having a distal end and a proximal end, the body being formed from a self-supporting non-metallic graft material and at least a portion of the graft material including a plurality of pleats disposed in a Z pattern.
2. The prosthesis of claim 1 further comprising a distal anchor connected to the distal end of said prosthesis.
3. The prosthesis of claim 2 wherein the distal anchor includes a metal support structure.
4. The prosthesis of claim 1 further comprising a proximal anchor connected to the proximal end of said prosthesis.
5. The prosthesis of claim 4 wherein the proximal anchor includes a metal support structure.
6. The prosthesis of claim 1 wherein at least a section of the self-supporting non-metallic graft material is woven.
7. The prosthesis of claim 1 wherein at least a section of the self-supporting non-metallic graft material is non-woven.
8. The prosthesis of claim 1 wherein at least a section of the self-supporting non-metallic graft material is knitted.
9. The prosthesis of claim 1 wherein the self-supporting non-metallic graft material includes polyester.

10. The prosthesis of claim 1 wherein the self-supporting non-metallic graft material includes polypropylene.

11. The prosthesis of claim 1 wherein the self-supporting non-metallic graft material includes polyethylene.

12. A prosthesis for maintaining lumen patency comprising:

A hollow body portion having a distal end and a proximal end, the body being formed from a self-supporting non-metallic graft material and at least a portion of the graft material including a plurality of pleats disposed in a pattern that provides radial support to the body while maintaining flexibility.

13. The prosthesis of claim 12 wherein the pleats are disposed in a sinusoidal pattern.

14. The prosthesis of claim 12 wherein the pleats are disposed in an elliptical pattern.

15. The prosthesis of claim 12 wherein the pleats are disposed in an helical pattern.

16. The prosthesis of claim 12 wherein the pleats are disposed in an oblique pattern.

17. A prosthesis for maintaining lumen patency comprising:

a hollow body portion comprising a non-metallic graft material; and
means for providing radial support to the body portion.